Influence of the Wall Thickness of the Mould on the Solidification and Quality of a Steel Ingot. I. Ya. Granat and A. A. Bezdenezhnykh. (Metallurg, 1938, No. 10, pp. 19-33). (In Russian). Prior to the study of the solidification of 7-ton ingots with the object of improving the mould design, the authors studied the effect of mould-wall thickness on the solidification process. For this purpose a vertical circular mould (with internal diameter varying from 650 mm. to 920 mm. and height 2300 mm.) was used, a wall thickness varying from 240 to 80 mm. being obtained by the out-of-centre position of the cylindrical interior. The rate of cooling of the steel near the 240- and 80 mm.-thick mould walls was studied by temperature measurements, by means of suitably protected platinum/platinum-rhodium thermocouples which had been passed through the walls and made to protrude 3 cm. into the interior. Calculations based on the cooling curves obtained showed that during solidification the thin wall removed more heat from the molten metal than did the thick mould wall. This was also confirmed by examination of the structure of the ingot. The process of solidification in the 7-ton industrial rectangular ingot mould was studied by temperature measurements by means of thermocouples let into the walls at different levels. Curves showing temperature distributions in the mould walls and heat losses from various parts of the mould, as solidification progressed, were obtained. Defects, in particular piping, of the ingots was traced to incorrect mould design. The design should provide an increase in wall thickness from bottom to top with no, or only a minimum, taper in the same direction.

GRANAT, I. YA.

USSR/Engineering   Feb 1948
    Foundry Practice
    Casting

"Development and Present Day Status of Continuous
Casting of Metals," I. Ya. Granat, Candidate Tech
Sci, V. M. Tageyev, Engr, 7 pp

"Stal'" No 2

In spite of the great engineering, technologic, and
economic advantages of continuous casting of steel
parts, the basic method of conducting continuous
casting--with a moving and stationary crystallizer--
cannot be said to be sufficiently developed for ef-
ficient industrial use. It is important and neces-
sary to intensify experimental work in this field.
FDB   41T17

SAMARIN, A.M.; YEFIMOV, L.M.; VESELKOV, N.G.; ORMAN, R.Z.; SHABANOV, A.N.;
MOROZENSKIY, L.I.; GRANAT, I.Ya.; TOCHINSKIY, A.S.; ALYAVDIN, V.A.;
DANILOV, P.M.; PETRIKEYEV, V.I.; POPOV, B.N.; BOBKOV, T.M.;
ROSTKOVSKIY, S.Ye.; GAVRISH, D.I.; D'YAKONOV, N.S.; TIMOSHPOL'SKIY,
M.N.; ROMANOV, V.D.; POCHTMAN, A.M.; MELESHKO, A.M.; PODGORETSKIY,
A.A.; OFENGENDEN, A.M.; BRONSHTEYN, V.M.; PRIDANTSEV, M.V.; LIVSHITS,
G.L.; ROZHKOV, V.A.; RUTES, V.S.

Reports (brief annotations). Biul. TSNIICHM no.18/19:15-16 '57.
(MIRA 11:4)

1. Chlen-korrespondent AN SSSR (for Samarin). 2. TSentral'nyy
nauchno-issledovatel'skiy institut chernoy metallurgii (for Rutes,
Rostkovskiy, Pridantsev, Livshits, Rozhkov). 3. Stal'proyekt (for
Shabanov). 4. Kuznetskiy metallurgicheskiy kombinat (for Alyavdin,
Danilov, Petrikeyev). 5. Zavod "Elektrostal'" (for Popov).
6. "Dneprospetsstal'" (for Bobkov). 7. Glavogneupor Ministerstva
chernoy metallurgii SSSR (for Gavrish). 8. Planovoye upravleniye
Ministerstva chernoy metallurgii SSSR (for D'yakonov). 9. Otdel
rabochikh kadrov, truda i zarplaty Ministerstva chernoy metal-
lurgii SSSR (for Timoshpol'skiy). 10. Glavvtorchermet Ministerstva
chernoy metallurgii SSSR (for Romanov). 11. Giprostal' (for
Pochtman). 12. Zavod im. Voroshilova (for Meleshko). 13. Zavod
"Zaporozhstal'" (for Podgoretskiy). 14. Stalinskiy metallurgicheskiy
zavod (for Ofengenden). 15. Nizhne-Tagil'skiy metallurgicheskiy
kombinat (for Bronshteyn).

(Steel—Metallurgy)

137-58-6-11845

AUTHORS: Morozenskiy, L.I., Granat, I.Ya., Tochinskiy, A.S.

TITLE: Continuous Casting of Steel (Nepreryvnaya razlivka stali)

ABSTRACT: Three methods of continuous casting of steel are examined. One is characterized by the fact that the level of the metal in the crystallizer (K) changes periodically as the result of periodic changes in the rate of withdrawal of the billet (B) or the rate at which the metal is poured. This principle is employed in an experimental pilot plant with inclined K for pouring B measuring 250x250 mm. Over 8000 tons of B have been cast on this equipment. The casting rate is ~400 kg/min. The yield of passable cast B is 92-95% of the weight of the molten steel, and the yield of passable rolled product is 86-90% of the weight of the cast B. The second method is characterized by the fact that after filling the K with metal to the given level, the flow of metal is cut off and the stage of B coming into being is held in the K for a firm rim to form. Then the K is opened, and the B

Card 1/2

137-58-6-11845

Continuous Casting of Steel

is lowered so that its upper portion serves as a floor for the next filling. The K halves are closed, and the next load of metal is poured. Multiple repetition of this cycle builds up the B step by step. In practice, casting is done in two K, metal being poured into one while the other is held. B of 270x270 cross section are cast in an experimental vertical pilot plant with two K built on the foregoing principle. Over 12,000 t of B have been thus cast. The yield of good cast B is 96-92% of the weight of the molten steel, and the yield of good rolled product is 88-92% of the weight of the cast B. The third method, continuous multisection bottom pouring, is designed to cast B of small cross section from large capacity ladles. The metal is poured from above into one of the parallel sections of the K; the others receive it by siphon from the first through channels connecting the sections. An experimental 5-section plant for casting B of 115x115 mm at 25-30 t/hr has been built on this principle.

1. Steel--Casting   2. Steel--Processing   3. Industrial plants--Equipment

N.N.

Card 2/2

G RANAT, I. Ya,

137-1958-2-2489

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 43 (USSR)

AUTHORS: Morozenskiy, L.I., Zitel', O.D., Granat, I.Ya.

TITLE: Phenomena Discovered With Radioactive Tracers During a Study
of the Solidification Process in Steel Ingots (Yavleniya, obnaru-
zhennyye metodom radioaktivnykh indikatorov pri issledovanii
zatverdevaniya stal'nykh slitkov)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR,
1957, pp 765-780. Diskus., pp 781-791

ABSTRACT: A study was made of the phenomenon of the displacement of
metal during solidification of an ingot and of what causes it. Ex-
periments were conducted on ingots with a large N/D value with
the aid of the radioactive isotopes S^{35}, P^{32}, and W^{185}, which
had first been dissolved in molten metal and then were poured into
either the upper or the lower part of the ingot. The distribution
of the isotope was determined by autoradiography of longitudinal
templets of the ingots under study. The steel used in the experi-
ments was 30KhN2A, which had been cast into vertical ingots
measuring 270x270x2600 mm, and steel 45 in ingots 250x250x
Card 1/3   4000 mm, which were cast in an inclined mold. It became evident

137-1958-2-2489

Phenomena Discovered With Radioactive Tracers (cont.)

that the tracers were not evenly distributed throughout the ingots, that instead they formed alternating bands which were parallel to the crystallization front. On a sulfur print these bands did not show up. The dispersion of the tracers occurred only in a downward direction and at great speeds, which reached 20 m/min. These phenomena resulted neither from an isotope exchange nor from convection currents, but were attributed to a shrinkage of the metal at the moment it crystallizes. According to this hypothesis the currents in the molten metal caused by the shrinkage develop most fully only at those sections of the crystallization front at which the vertical component of the hydrostatic pressure of the metal on the sides is either an upward one or equals zero. The greater the coefficient of shrinkage, the N/D ratio, and the crystallization rate, the greater will be the speed of the flow. The motion exhibited by the metal was linked to the structure of the ingot which was characterized by the fact that the orientation of the secondary axes of the dendrites in the half-section adjoining the upper face of the inclined ingot coincided with the direction of the currents, notwithstanding the orientation of the primary axes. Moreover, in the inclined ingot the macrostructure was asymmetrical; this also was accounted for

Card 2/3   by the action of the currents in the ingot metal, which were moving

137-1958-2-2489

Phenomena Discovered With Radioactive Tracers (cont.)

at different speeds along the top and bottom faces of the ingot. The currents in the metal, which descend near the crystallization front, could be one of the causes of the extra-axial chemical heterogeneity (the "branches") which develop . The foregoing hypothesis tends to support the position which holds that, as the angle of taper of ingots which broaden upward increases, the "branches" show up less sharply, for this corresponds to the reduced flow of metal along the crystallization front.

V.N.

1. Steel--Solidification   2. Steel--Displacement--Theory

Card 3/3

AUTHORS: Zigel', O.D., Morozenskiy, L.I., Granat, I.Ya.

TITLE: Factors Governing the Appearance of Extra-axial Chemical Inhomogeneity in Steel Ingots (Faktory, opredelyayushchiye razvitiye v stal'nykh slitkakh vneosevoy khimicheskoy neodnorodnosti)

PERIODICAL: V sb.: Staleplavil'n proiz-vo. Moscow, Metallurgizdat, 1958, pp 75-88

ABSTRACT: A study of the process of ingot formation was first conducted with billets of high height-to-cross-section ratio produced by continuous casting of steel. P^{32}, W^{185}, and S^{35} were introduced into the metal in the tundish. Macroscopic radiography of templets showed the isotopes to be in layers parallel to the plane of crystallization of the metal, the dissemination thereof into the ingot proceeding downwards at a rate of 10 m/min under the conditions of the experiment. This distribution of the isotope reveals the cause of its dissemination into the ingot to be primarily transfer by streams of liquid metal, the movement of which is induced, in the crystallization of an ingot

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SOV/137-58-9-18689

Factors Governing the Appearance of Extra-axial Chemical (cont.)

of killed steel, primarily by shrinkage upon transition from the liquid to the solid state. Metal containing W^{185} was added to in sand molds of various shapes after they had been filled. It was found that the radioactive tracer enters the casting in flows of metal along the front of crystallization at a rate considerably greater than the rate of motion of the metal in the rest of the liquid mass. The direction of displacement of the metal in the casting is not determined either by the temperature distribution in the casting or by the temperature of the metal in the incoming flow. The angle to the horizontal of segments of the front of crystallization has a significant effect upon the formation of longitudinal flows along the front. The influence of displacements of metal along the front of crystallization upon the degree of extra-axial chemical inhomogeneity was verified by loam casting of a 1.5-t ingot the sides of which had tapers of 30, 20, 5, and 0%. The appearance of "whiskers" adjacent to the vertical edge was noticeably more intensive than near the edges with 30% taper. The intensity of the metal flows along the front of crystallization depends upon the rate of solidification. Zonal inhomogeneity may occur only where the rate of crystallization is capable of giving rise to an intensified flow of metal along the front, and the formation of a region where 2 phases exist simultaneously. This explains the formation of pronounced inhomogeneities in the hot top of an ingot and the absence
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SOV/137-58-9-18689

Factors Governing the Appearance of Extra-axial Chemical (cont.)

thereof toward the bottom. The differences in the chemical composition of the steel affect the intensity of "whisker" development because they result in different degrees of shrinkage of the metal.

L.K.

1. Steel--Processing   2. Steel--Crystallization   3. Steel--Structural analysis
4. Radioisotopes--Diffusion   5. Steel--Radiographic analysis

Card 3/3

SOV/123-59-15-60472

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 15, pp 223 - 224
(USSR)

AUTHORS: Zigel', O.D., Morozenskiy, L.I., Granat, I.Ya.

TITLE: Factors Determining the Development of Non-Axial Chemical and Structural
             Heterogeneity in Steel Bars and Castings

PERIODICAL: V sb.: Zatverdevaniye metallov. Moscow, Mashgiz, 1958, pp 338 - 351

ABSTRACT: In order to elucidate the causes of the development of non-axial heterogeneity
             tests were carried out with steel bars of continuous casting with a cross-
             section of $250 \cdot 250$ and $270 \cdot 270$ mm, which were cast in vertical and in-
             clined position (at an angle of $30°$ with respect to the horizon), and with
             steel castings of various configuration produced in sand molds. During the
             crystallization period of the bars and castings, steel containing the radio-
             active isotopes P^{32}, W^{185} or S^{35} was added. The radiograms obtained per-
             mitted to determine the parts of diffusion within the bulk of the casting,
             of this steel which compensated the solidification shrinkage. It was found
             out that the steel supplied formed flows near the crystallization front,
Card 1/3   which almost did not reach the central zone of the liquid metal. The most

SOV/123-59-15-60472

Factors Determining the Development of Non-Axial Chemical and Structural Heterogeneity in Steel Bars and Castings

Intensive flows occured near those sections of the crystallization front which are located horizontally above the liquid metal or vertically, where the vertical component of hydrostatic pressure is directed upwards or equal to zero. Near the front sections located horizontally below the liquid metal, e.g. in the bottom part of the bar, the flows were developed weakly or did not appear at all; here the supply takes place mainly at the expense of the above-located layer of metal. The flow intensity near the inclined sections may have a number of intermediate values, depending on the angle and direction of inclination. For instance the flow intensity is greater in bars growing wider at the bottom than in bars with vertical walls, and smaller in bars growing in width at the upper part. In both cases the difference is the more considerable, the more slanting the walls are. Also the extension of the crystallization front affects the flow intensity. On the basis of the comparison of the data obtained on the flow direction of the metal supply with the actual data on the location of dendritic heterogeneity ("whisker") in bars of bubble-free steel, it can be concluded that these flows are the causes of the appearance of "whiskers". Another necessary condition for the formation of whiskers is the existence of a zone of solid-liquid metal. At a high solidification rate this zone does not develop, therefore "whiskers" are not formed.

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SOV/123-59-15-60472

Factors Determining the Development of Non-Axial Chemical and Structural Heterogeneity in Steel Bars and Castings

At too low cooling rates "whiskers" might not form either, in spite of the presence of a developed zone of solid-liquid metal, since in this case the flow intensity is considerably reduced. Effects of the flows on the character of the structure were also discovered. In bars of continuous casting, crystallized in an inclined position at an angle of 30° relative to the horizon, at the upper face, where the flows develop most strongly, longer columnar crystals were formed than at the lower face, in consequence of the heating effect of the flows. In the zone of increased development of flows the direction of the dendritic axes of the second order coincides with the direction of the flows and does not depend on the direction of the axis of the first order. lo figures.

O.S.M.

Card 3/3

ZHURAVLEV, P.Ya.; EFROS, D.I.; KUTENKO, Yu.V.; POKROVSKIY, V.A.; GRANAT,
        I.Ya.; MOROZENSKIY, L.I.; GORSKIY, V.B.

    Influence of vacuum treatment and the conditions of steel
    deoxidation on the formation of surface defects in continuous
    ingots. Stal' 25 no.10:891-894 O '65.

    1. Gor'kovskiy mashinostroitel'nyy zavod.   (MIRA 18:11)

L 30059-66   EWP(w)/EWP(v)/EWP(k)   IJP(c)   WW/EM

ACC NR: AP6020590

AUTHOR: Granat, Ludek (Prague)

SOURCE CODE: CZ/0026/66/011/001/0063/0066

ORG: Research Institute of Mathematical Machinery, Prague (Vyzkumny ustav matematickych stroju)

TITLE: Note on the article of M. Kuniak: graphic determination of the characteristics of the helical surfaces of a casing

SOURCE: Aplikace matematiky, v. 11, no. 1, 1966, 63-66

TOPIC TAGS: construction, graphic technique, solid geometry

ABSTRACT: A conoid formed by normals constructed at points of the characteristics of an enveloping helical surface to the generating surface of a cylinder of rotation is a hyperbolic paraboloid. The characteristic of the enveloping helical surface can also be constructed as the line of intersection of the generating surface and the hyperbolic paraboloid when the generating surface is a second-order surface of rotation. The characteristic of the enveloping helical surface, where the generating surface is a torus, is an eighth-order curve when can be determined with the two equations derived in the article. Orig. art. has: 6 formulas. [JPRS]

SUB CODE: 12/ SUBM DATE: 02Apr65/ ORIG REF: 001/ SOV REF: 001

Card 1/1

L 10611-66   EWT(d)   IJP(c)

ACC. NR. AP6004058   SOURCE CODE: CZ/0081/65/090/002/0194/0199

AUTHOR: Granat, Ludek (Prague)   29

ORG.:   none

TITLE: p-Projection of a straight line on a surface

SOURCE: Casopis pro pestovani matematiky, v. 90, no. 2, 1965, 194-199

TOPIC TAGS: construction, projective geometry, surface geometry, analytic
          geometry

ABSTRACT: The article demonstrates a method of analytical construction of the
theory of p-projections of a straight line on a surface and derives additional
relations which can be used in graphic constructions. Orig. art. has: 10
formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 02Apr64 / ORIG REF: 001 / OTH REF: 001 / SOV REF: 001

                                              jc

Card 1/1

GRANAT, L. N., starshiy nauchnyy sotrudnik

Prevention of incipient puerperal mastitis. Akush. i gin. no.2:
29-33 '62.   (MIRA 15:6)

1. Iz 2-go akusherskogo otdeleniya (zav. - prof. S. G. Khaskin)
Instituta akusherstva i ginekologii (dir. - chlen-korrespondent
AMN SSSR prof. P. A. Beloshapko[deceased]) AMN SSSR.

      (BREAST—DISEASES)   (PUERPERIUM)

GRANAT, L.N.

Puerperal mastitis and its clinical course under conditions
of mass immunization with staphylococcal anatoxin; from data
of obstetrical and surgical hospitals and polyclinics in
Leningrad. Akush. i gin. 40 no.1:25-27 Ja-F '64.

(MIRA 17:8)

1. 2-ye akusherskoye otdeleniye (zav. - prof. S.G. Khaskin)
Instituta akusherstva i ginekologii AMN SSSR (dir. - prof.
M.A. Petrov-Maslakov), Leningrad.

GRANAT, L.N.; MOSKALENKO, Yu.Ye.

Changes in the hemodynamics in the female breast under the effect
of heat and cold stimulation. Fiziol. zhur. 51 no.9:1100-1107 S
'65.   (MIRA 18:9)

1. Institut akusherstva i ginekologii AMN SSSR i Institut evolu-
tsionnoy fiziologii i biokhimii imeni I.M.Sechenova AN SSSR,
Leningrad.

GRANAT, L.N.; IVANOVA, V.V.; YUKHNOVSKAYA, S.Yu., red.

[For the young mother] Molodoi materi. Moskva, Meditsina,
1965. 34 p.   (MIRA 18:6)

VOZNESENDKIY, B.N.; LOGINOV, D.F. [deceased]; GRANAT, M.B.; BELIKOV, B.S.,
    redaktor; SOKOLOVA, R.Ya., tekhnicheskiy redaktor

    [Album of basic circuits for combined operation of dial telephone
    exchanges with machine-switching and step-by-step systems] Pro-
    mezhutochnoe oborudovanie dlia sovmestnoi raboty ATS mashinnoi i
    shagovoi sistem. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i
    radio, 1954. 187 p. [Microfilm]   (MLRA 8:6)
        (Telephone, Automatic)

BORODZYUK, G.G.; STEPANOV, G.N.; DRIATSKIY, N.M.; IONTOV, L.Ye.; KOVALEV,
    S.M.; BLOKHIN, A.S.; DVORTSOV, L.D.; LUGOVSKOY, N.Ye.; MERKULOV,
    A.G.; SMIRNOV, B.P.; ROGINSKIY, E.M.; BALAN-IL'YEVSKAYA, I.A.;
    IZRAILIT, S.G.; GRANAT, M.B.; ZARIN, S.A., otv.red.; FEDOROVSKAYA,
    L.N., red.; MARKOCH, K.G., tekhn.red.

[Multichannel apparatus for high-voltage telephony on overhead
lines and cables] Mnogokanal'naia apparatura vysokochastotnogo
telefonirovaniia po vozdushnym i kabel'nym liniiam sviazi. Moskva,
Gos.izd-vo lit-ry po voprosam sviazi i radio, 1959. 511 p.
                                                   (MIRA 14:1)
            (Telephone--Equipment and supplies)

GRANAT, N.L.

Flow of a uniformly eddying ideal liquid with imposed circulation past a cylinder near the wall. Izv.VNIIG 62:137-146 '59.

(MIRA 13:6)

(Hydraulics)

S/179/60/000/01/010/034
E031/E535

AUTHOR: Granat, N. L. (Leningrad)

TITLE: The Motion of a Rigid Body in the Pulsating Flow of a Viscous Fluid

ABSTRACT: The steady oscillations of a sphere in a flow of fluid which is pulsating according to an arbitrary law in which the Reynolds number of the motion is small is considered. An expression is used for the force, obtained by solving the equations of motion of the fluid at Reynolds numbers of less than unity, which is a generalization of Stokes' expression for the harmonic oscillations of a body in a fluid which is undisturbed at infinity to the case of the arbitrary periodic motion of a sphere in a pulsating flow. The fluid is assumed to be homogeneous, viscous and incompressible. Consideration of flow at low Reynolds number allows the convective terms in the expression for the acceleration to be ignored. An
Card 1/4 approach due to A. I. Lur'e is used to reduce the equations

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E031/E535

The Motion of a Rigid Body in the Pulsating Flow of a Viscous Fluid

of motion to a single equation involving the function $\underline{f}$,
where curl $\underline{u} = \underline{f} \times \underline{r}$, from which the velocity $\underline{u}$ can be
determined. f is defined by a scalar differential
equation. If the velocity of the pulsating flow is
given in the form of a Fourier series, the velocity of
the sphere will have the same form, and so the expression
for f is sought in a similar form. The coefficients in
the expansion for the velocity of the sphere are determined
by the equation of motion of the sphere, $m \ddot{u}_s = K$ where
the force K is calculated by applying the theorem
about the change in the momentum to the volume of fluid
between the sphere and a control surface. It is seen
that to each harmonic component of the flow velocity
there corresponds a harmonic component of the sphere
velocity different from the first in amplitude and phase.
By considering the ratio of the amplitudes of the
components of the two velocities and their phase
differences, it is seen that a sphere which is denser than

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E031/E535

The Motion of a Rigid Body in the Pulsating Flow of a Viscous Fluid

the fluid will oscillate with amplitudes less than the amplitudes of the flow, the converse holding if the sphere is less dense than the fluid. The oscillations of the sphere which is denser than the fluid lag in phase and the converse is true for a sphere which is less dense than the fluid. The generalized Stokes' force referred to above can be used to estimate the error when the force applied to the body is given approximately as the sum of the inertial forces arising through the motion of the body in an ideal fluid and the viscous drag forces in stationary motion. The dissipation of energy caused by the relative oscillations of solid particles in a fluid is discussed, the solution derived above being used to obtain an expression for the dissipation. Next the distribution of the dissipation of energy near the sphere is considered and the dimension of the region of disturbance determined. Acknowledgment

Card 3/4   is made to M. A. Dement'yev for advice and directives.

S/179/60/000/01/010/034
E031/E535

The Motion of a Rigid Body in the Pulsating Flow of a Viscous Fluid

There are 5 figures and 9 references, 5 of which are
Soviet, 1 French and 3 English.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut
gidrotekhniki (All Union Scientific Research Institute
of Hydraulic Engineering)

SUBMITTED: August 8, 1959

Card 4/4

S/124/61/000/009/019/058
D234/D303

AUTHOR: Granat, N.L.

TITLE: Motion of a free solid particle in a turbulent
                 stream of liquid

PERIODICAL: Referativnyy zhurnal. Mekhanika, no. 9, 1961, 80,
                 abstract 9 B576 (Izv. vses, n.-i., in-ta gidrotekhn.,
                 1960, 65, 63-75)

TEXT: The author considers the motion of a free spherical
solid particle in a homogeneous unbounded pulsating stream of a
viscous incompressible liquid at small values of Reynolds' number.
In contrast to previous papers, neither the hypothesis of stationary
character of the viscous resistance force not Boussinesq formula are
utilized here. The solution of the problem is achieved in the fol-
lowing manner. It is supposed that the known velocity of the undis-
turbed pulsating stream of liquid (at infinity) U_w and the unknown
velocity of the particle situated in this stream U_s can be expanded

Card 1/4

Motion of a free solid particle...

S/124/61/000/009/019/058
D234/D303

into a Fourier series. The velocity U of the disturbed motion of the stream is expressed with the aid of the continuity equation and the equations of motion in terms of expansion coefficients of the functions U_w and U_s, after which the expression of the force K acting on the particle from the stream is easily determined in terms of the same coefficients. The substitution of the expressions of U_w, U_s, K into the equation of motion of the particle permits determination of the unknown coefficients of the expansion of the function U_s. Analysis of the results obtained shows that a free spherical particle in a pulsating stream of a viscous incompressible liquid acquires an average velocity equal to the average velocity of the stream, and a pulsation velocity different from the pulsation velocity of the stream. Each harmonic component of the velocity of the particle differs from the corresponding harmonic component of the velocity of the stream in amplitude as well as in phase (except the case when the density of the particle ρ_s is equal to the density of the stream ρ_w). The ratio of corresponding amplitudes and the phase displacement are functions of two dimensionless

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Motion of a free solid particle...   S/124/61/000/009/019/058
                                        D234/D303

parameters

$$\Delta = \frac{\rho_s}{\rho_w} \quad \text{and} \quad \alpha_n = r_0 \sqrt{\frac{n\omega}{2\nu}} = \sqrt{R_n}$$

where r_0 is the radius of the particle, ν the kinematical viscos-
ity coefficient, n the order of the harmonic in the Fourier expan-
sion, ω the frequency of oscillations. The oscillations of a
particle of a density larger than that of the liquid ($\Delta > 1$) have
smaller amplitudes, and are behind the corresponding oscillations of
the liquid in phase; the opposite takes place in the case $\Delta < 1$.
The maximum phase displacement possible is 90°. From the values
$\alpha_n > 2$ the dependence of the phase displacement and the ratio
of amplitudes on α_n becomes very weak. A formula is deduced for
the force K acting on a sphere in a pulsating stream which is a
generalization of Stoke's formula obtained for the case of harmonic
oscillations of a sphere in q liquid at rest. This formula is com-
pared with the expression for the force K_c obtained with the use

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$$D234/D303$$

of the hypothesis of stationary motion. It is shown that the dif-
ference $K - K_c$ (i.e. the force not taken into account by the hypo-
thesis of stationary motion) depends essentially on α_n and Δ.
The ratio of the amplitudes of corresponding harmonics of the un-
accounted force $K - K_c$ and the total force of K (which characterizes
the error caused by the hypothesis of stationary motion) reaches
its maximum value (0.551) at $\alpha_n = 1.225$ and $\Delta = \infty$. For $\alpha_n > 15$
the hypothesis of stationary motion leads to a very small error.
/ Abstracter's note: Complete translation_7

Card 4/4

GRANAT, N.L. (Leningrad)

Turbulences produced by a body moving in a viscous fluid. Izv.
AN SSSR, Otd. tekh.nauk.Mekh. i mashinostr. no. 1:86-89 Ja-F '61.
(MIRA 14:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki.
(Turbulence)   (Fluid dynamics)

GRANAT, N.I., kand. fizikr-matem. nauk

Considerable oscillations of a sphere in a viscous fluid. Izv. VNIIG
76:289-298 '64.   (MIRA 18:10)

EWP(m)/EWA(h)/EWP(k)/EWT(d)/EWT(l)/EWT(m)/FCS(k)/EWA(d)/EWP(w)

... , N. L. (Leningrad)

... of sphere oscillations in a two-phase mixture (vibro-viscosity
... density)

SOURCE: AN SSSR. Izvestiya. Mekhanika, no. 1, 1965, 34-41

TOPIC TAGS: viscous flow, viscosity, two phase flow, drag coefficient, vibration,
... dissipation

... viscosity and density of a liquid-solid mixture were

... sphere is assumed to consist of the sum of two ... a loss ...
... the same speed ... the surrounding liquid, and

liquid. From the equations of motion for the whole system, the following effect..
density expression is obtained for the two-phase mixture

Card 1/3

L 49789-65
ACCESSION NR: AP5010184

$$\eta^* = 1 + s(\Lambda_1 - 1)\left[1 - \frac{\Lambda_1 - 1}{\Lambda} \frac{1}{z_1} \left(\Lambda_1 + \frac{1}{2} + \frac{9}{4 z_1}\right)\right] \qquad z_1 = r_0 \sqrt{\frac{\omega}{2\nu}}$$

... the effective viscosity ... concentration ...
... density Λ_1, ...
... energy losses D_1 and D_2 yields the ...

$$D^* = D_1 + D_2 =$$
$$= 3\pi\mu R_0 A_0^2 \left[(1 + x)(1 + 2.5s) + \frac{9}{4}\left(\frac{R_0}{r_0}\right)^2 \frac{s(1 + ...)(\Lambda_1 - 1)^2(1 + z_1)}{z\Lambda(z_1)}\right].$$

... ression for the effective mixture viscosity is given by

... concluded that the effective ... viscosity increases

... frequency ω. Fig. art. has ...

ASSOCIATION: none

Card 2/3

EWP(m)/EWT()/EPR/EWA(d)EWA(1)/   P-1/P-/Ps-   AEDC()/SSD/AFWL/

N.W.: AF...-?3   ...1/...

AUTHOR: Granat, N. L. (Leningrad)

TITLE: Steady-state oscillations of a container with a two-phase mixture

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no. 5, 1964, 61-64

TOPIC TAGS: two phase flow, incompressible flow, solid phase, viscous fluid flow, vibration, friction force

ABSTRACT: The force and energy required to maintain given steady-state oscillations in a two-phase mixture were calculated, using previous results on motion of solid particles in pulsating, viscous, incompressible liquids. The container is assumed to have a volume V and to contain a small amount of spherical solid particles (of concentration s^*) homogeneous in distribution in a liquid medium. A linear, steady, harmonic motion is applied to the system, $u = A \sin \omega t$, and the equation of motion of the system is given by

$$ \dot{P} = m\dot{u} + \rho V s (\Delta - 1) \dot{w} \quad (\Delta = \rho_0/\rho) \quad \text{where} \quad m = \bar{m}^0 + \rho V [1 + s(\Delta - 1)] $$

is the mass of container plus mixture. Here ω is determined from viscous flow

Card 1/2

L 22169-65
ACCESSION NR: AP5002593 O

analyses of solid particles in a pulsating fluid given by N. L. Granat (Dvizheniye
tverdogo tela v pul'siruyushchem potoke vyazkoy zhidkosti. Izv. AN SSSR, OTN,
Mekhanika i mashinostroyeniye, No. 1, 1960; and Nemalyye kolebaniya shara v
vyazkoy zhidkosti. Izv. VNIIG, t. 76, 1964), both for oscillation amplitudes small
and large relative to particle dimensions. Next, ω is shown to be a function of
δ (relative density of solid particles) and α $= $ A numerical
example is given for a water-magnetite mixture, s = .15, ω = 50 sec^{-1} and
A^0 = 3 mm. The result shows that the amplitude of the perturbation force
is

$$H = A\sqrt{\omega^2(k + k_0)^2 + (c - m\cdot\omega^2)^2} ,$$

where k is a reduced drag coefficient, is forty times lower than the magnitude one
would obtain by assuming no relative motion between the solid particles and the
container. Orig. art. has: 13 equations and 2 figures.

ASSOCIATION: none

SUBMITTED: 18May64   ENCL: 00

SUB CODE: ME   NO REF SOV: 002   OTHER: 000
Card 2/2

GRANAT, N.Ye.

[Hygiene during pregnancy] Gigiena beremennoi zhenshchiny. 2 ispr.
izd. Moskva, In-t sanitarnogo prosveshcheniia, 1949. 15 p.
(Zaochnye kursy dlia beremennykh zhenshchin, lektsiia 2) (MIRA 7:6)
        (Pregnancy)

GRANAT, N.Ye.

Rasskaz vracha (A physician's story).
Izd. 3-e, ispr. i dop. Moskva, In-t san. prosveshche-
niia, 1953. 38 p. (B-chka kolkhoznika)

SO: Monthly List of Russian Accessions, Vol. 7, No. 5, August 1954

GRANAT, N.Ye.

Decree of 1754 on the organization of midwife schools in Russia.
Akush. i gin. no.5:88-91 S-O '54.   (MLRA 7:12)

1. Iz Instituta akusherstva i ginekologii (dir. L.G.Stepanov,
nauchnyy rukovoditel' prof. P.A.Beloshapko) Ministerstva zdravo-
okhraneniya SSSR.
         (MIDWIVES,
            hist. of educ. in Russia)

GRANAT, N. Ye.

STEPANOV, L.G.; GRANT, N.Ye.

"Rural feldsher-midwife station." G.F.Konstantinov, I.IA.Bychkov.
Reviewed by L.G.Stepanov, N.E.Granat. Akush. i gin. no.6:87-89
N-D '54.   (MLRA 8:2)
        (MEDICINE, RURAL)   (MIDWIVES)   (KONSTANTINOV, G.F.)

GRANAT, N.Ye.

Work of a midwife at a midwifefeldsher station. Sov. med, 18 no.8:
36-39 Ag '54.   (MLRA 7:8)

1. Iz nauchno-issledovatel'skogo instituta akusherstva i ginekologii
Ministerstva zdravookhraneniya SSSR (dir. L.G.Stepanov, nauchnyy ruko-
voditel' prof. P.A.Beloshapko)
          (PUBLIC HEALTH,
               in Russia, feldsher-midwife stations)

GRANAT, N. Ye.,

GRANAT, N.Ye.; STEPANOV, L.G.,(Moskva)

Work of a rural midwife. E. Klenitskaia, L. Mel'nikova. Reviewed
by N.E.Granat, L.G. Stepanov. Fel'd. i akush. no.8:57-60 Ag '55.
(MIDWIVES) (KLENITSKAIA, E.)   (MLRA 8:10)

BARTEL'S, A.V.; GRANAT, N.Ye. (Moskva)

Physical culture during puerperium. Fel'd. i akush. 21 no.12:21-29
D '56.   (MIRA 10:1)
        (PUERPERIUM)   (EXERCISE)

GRANAT, Nikolay Yefimovich; BELOSHAPKO, Pavel Andreyevich, red.

[Abortion; materials for lectures and talks] Abort; material dlia
lektsii i besed. Pod red. P.A. Beloshapko. Moskva, In-t sanitarnogo
prosveshcheniia, 1957. 54 p.   (MIRA 11:10)
                        (ABORTION)

GRANAT N YE.

BULYGINA, Ye.A., starshiy nauchnyy sotrudnik; GRANAT, N.Ye., kandidat
          meditsinskikh nauk; ZHELOKHOVTSEVA, I.N., kandidat meditsinskikh
          nauk

The role of a rural district hospital in the organization of
obstetric services. Sov.zdrav. 16 no.8:29-34 Ag '57. (MIRA 10:10)

1. Iz Nauchno-issledovatel'skogo instituta akusherstva i ginekologii
(dir. L.G.Stepanov) Ministerstva zdravookhraneniya RSFSR.
          (OBSTETRICS
               obstetric serv. at general district hosp. in Russia)
          (HOSPITALS,
               same)

GRANAT, N. Ye.

BODYAZHINA, V.I., prof.; GRANAT, N.Ye., kand.med.nauk (Moskva)

The welfare of women in the U.S.S.R. Sov.med. 21 no.10:45-52 O '57.
      (MATERNAL WELFARE   (MIRA 11:1)
         in Russia)

ARKHANGEL'SKIY, Boris Aleksandrovich, zasluzhennyy deyatel' nauki;
SPERANSKIY, Georgiy Nesterovich, zasluzhennyy deyatel' nauki;
GRANAT, N.Ye., red.; OSTROVSKAYA, I.M., red.; ZUYEVA, N.K.,
tekhn.red.

[Mother and child; school for the young mother] Mat' i ditia;
shkola molodoi materi. Moskva, Gos.izd-vo med.lit-ry, 1959.
155 p.   (MIRA 12:12)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for
Arkhangel'skiy, Speranskiy).
        (PREGNANCY)   (INFANTS--CARE AND HYGIENE)

BARTEL'S, A.V.; GRANAT, N.Ye.; NOGINA, O.P.; SALGANNIK, G.M. [deceased];
SMIRNOV, G.I.; STEPANOV, L.G.; KHANOVA, T.M., red.; YANKELEVICH,
Ye.I., red.; GABERLAND, M.I., tekhn.red..

[Lecture course for pregnant women] Kurs lektsii dlia beremennykh
zhenshchin. Pod red. L.G.Stepanova. Izd.3. Moskva, Medgiz,
1959. 231 p.   (MIRA 12:8)

1. Nauchno-issledovatel'skiy institut akusherstva i ginekologii
Ministerstva zdravookhraneniya RSFSR (for all except Khanova,
Yankelevich, Gaberland). 2. Direktor Nauchno-issledovatel'skogo
instituta akusherstva i ginekologii Ministerstva zdravookhrane-
niya RSFSR (for Stepanov).
                    (PRENATAL CARE)

BODYAZHINA, V.I., prof.; GRANAT, N.Ye., kand.meditsinskikh nauk; OSTROVITYANOVA,
     L.V. (Moskva)

     Some problems in the organization of gynecological service. Sov.
     zdrav. 19 no.6:16-20 '60.   (MIRA 13:9)
                         (GYNECOLOGY)

SHUB, Rafail L'vovich, zasluzhennyy deyatel' nauki Latviyskoy SSR, prof.;
    GRANAT, N.Ye., red.; ZAKHAROVA, A.I., tekhn.red.

    [Importance of vitamins and nitrofurans in obstetrics and
    gynecology] Znachenie vitaminov i nitrofuranov v akusherstve
    i ginekologii. Moskva, Medgiz, 1961. 157 p.

                                                (MIRA 15:4)

        (VITAMINS)   (FURAN)   (OBSTETRICS)
                    (GYNECOLOGY)

BRAUDE, Isaak Leont'yevich [deceased]; PERSIANINOV, Leonid Semenovich.
Prinimali uchastiye: BRAUDE, A.I., doktor med.nauk; GRANAT, N.Ye.,
kand.med.nauk; ZHMUR, V.A., prof.; MAKEYEVA, O.V., doktor med.
nauk; RAFAL'KES, S.B., dotsent. PORAY-KOSHITS, K.V., red.;
BUL'DYAYEV, N.A., tekhn.red.

[First aid in obstetrical and gynecological pathology] Neotlozhnaia
pomoshch' pri akushersko-ginekologicheskoi patologii. Moskva,
Medgiz, 1962. 356 p.   (MIRA 15:5)
            (FIRST AID IN ILLNESS AND INJURY)
                (OBSTETRICS)

GRANAT, N.Ye., kand.med.nauk; CHERNYAK, L.O., arkhitektor (Moskva)

Standard designs for obstetrics buildings for rural hospitals.
Sov.zdrav. 21 no.10:72-77 '62.   (MIRA 15:10)

1. Iz Instituta akusherstva i ginekologii (dir. - prof. O.V.
Makeyeva) i Proyektnogo instituta Ministerstva zdravookhraneniya
RSFSR (dir. A.A.Zhdanovich).
                (HOSPITALS, GYNECOLOGIC AND OBSTETRIC)

DONIGEVICH, Mikhail Ivanovich; GRANAT, N.Ye., red.; LYUDKOVSKAYA,
        N.I., tekhn. red.

        [Organization of obstetrical aid in a rural locality;
        Mordvinian A.S.S.R.] Opyt organizatsii rodovspomozheniia
        v sel'skoi mestnosti; Mordovskaia ASSR, Moskva, Medgiz,
        1963. 118 p.   (MIRA 16:7)
                (MORDOVIA—OBSTETRICS)

GRANAT, N.Ye.

      History of abdominal cesarean section. Med. sestra 22 no.3:
41-43 Mr'63.   (MIRA 16:6)
           (CESAEAN SECTION)

MAKEYEVA, O.V., prof., red.; POPOVA, G.F., red.; GRANAT, N.Ye.,
      kand. mekh. nauk, red.

    [Woman's health] Zdorov'e zhenshchiny. Moskva, Meditsina,
    1964. 181 p.   (MIRA 17:11)

GARMASHEVA, Natal'ya Leonidovna, prof.; GRANAT, N.Ye., red.

[For the woman about the intrauterine development of the
child] Zhenshchine o vnutriutrobnom razvitii rebenka.
Moskva, Meditsina, 1965. 23 p.   (MIRA 19:1)

GRANAT, S. S.

Granat, S. S.   —   "Some problems in the realm of measurement and regulation of
the wetness of linen for paper," Materialy Tsentr. nauch.-
issled. in-ta bumazh. prom-sti, Issue 37, 1948, p. 251-73
—— Bibliog: 8 items

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

GRANAT, S. S.

36192 Automatizatsiya i tekhnicheskiy progress proizvodstva. (S primech. red.)
Bumazh.   prom-st', 1949. No. 5. S. 38-42.

SO: Letopsi' Zhrunal'nykh Satey, No. 49, 1949

GRANAT, S.S., glavnyy konstruktor.

    Devices for control and measurement and automatic regulators in the wood
pulp and paper industry (continuation). Bum.prom. 28 no.7:15-19 Jl '53.
                                    (MLRA 6:7)

    1. Otdel avtomatiki Gosudarstvennogo instituta proyektirovaniya tsellyu-
lozno-bumazhnoy promyshlennosti.   (Wood-pulp industry)

GRANAT, S.S.

Control and measuring instruments, and automatic control in pulp and paper production. Bum. prom. 28 no.12:16-21 D '53.   (MLRA 6:12)

1. Glavnyy konstruktor otdela avtomatiki Giprobuma.
        (Wood-pulp industry)

GRANAT, S.S.

Control and measuring instruments and automation in pulp and
paper production. Bum.prom. 29 no.8:10-13 Ag '54. (MLRA 7:9)

1. Glavnyy konstruktor otdela avtomatiki Giprobuma.
   (Automatic control) (Paper industry) (Pulp industry)

CRANAT, Z.

Instruments for control and measurement and automatic machinery in the production of pulp and paper. P. 30.

SO: East European Accessions List, Vol. 3, No. 9, Sept. 1954, Lib. of Congress

GRANAT, S.S.

Control and measuring instruments and automation in pulp and
paper production. Bum.prom. 30 no.1:8-10 Ja '55. (MLRA 8:3)

1. Glavnyy konstruktor otdela avtomatki Giprobuma.
   (Paper industry)(Wood-pulp industry)

GRANAT, S.S.

Measuring instruments and automatic control in the woodpulp and
paper industries. Bum.prom. 31 no.9:7-9 S '56.   (MLRA 9:11)

1. Glavnyy konstruktor otdela avtomatiki Giprobuma.
      (Paper industry) (Woodpulp industry) (Automatic control)

Granat, S.S.

BALMASOV, Yevgeniy Yakovlevich; OBRAZTSOV, K.I., retsenzent; GRANAT, S.S., retsenzent; BABAKIN, B.I., red.; BARANOV, N.A., red.; SARMATSKAYA, G.I., red.izd-va; SHITS, V.P., tekhn.red.

[Automatic control of processes in the manufacture of woodpulp and paper] Avtomaticheskoe regulirovanie protsessov tselliulozno-bumazhnogo proizvodstva. Moskva, Goslesbumizdat, 1955. 248 p.
(Woodpulp industry)   (MIRA 11:6)
(Paper manufacture)   (Automatic control)

GRANAT, S S.

GRANAT, S.S., inzh.

Means of effecting automation in woodpulp and paper manufacture.
Bum.prom. 32 no.11:28-29 N '57.   (MIRA 11:1)

1.Giprobum.
                    (Woodpulp industry) (Paper industry)
                            (Automatic control)

PREOBRAZHENSKIY, L.N.; GRANAT, S.S.

Prospects and problems of automation in the woodpulp production.
Bum.prom. 37 no.10:6-8 O '62.   (MIRA 15:11)

1. Otdel avtomatiki Gosudarstvennogo instituta po
proyektirovaniyu predpriyatiy tsellyuloznoy
i bumazhnoy promyshlennosti.
                      (Woodpulp industry)
                      (Automation)

GRANAT, S.S.; BALLEASOV, Ye.Ya., nauchn. red.; POSTNOVA, I.D.,
        red.; SHENDAREVA, L.V., tekhn. red.

[Control of the composition of the paper stock] Regulirova-
nie kompozitsii bumazhnoi massy. Moskva, TSentr. in-t tekhn.
informatsii i ekon. issledovanii po lesnoi, bumazhnoi i de-
revoobrabatyvaiushchei prom. 1963. 30 p.   (MIRA 17:3)

1. Gosudarstvennyy institut po proyektirovaniyu tsellyulozno-
bumazhnoy promyshlennosti (for Granat).

GRANAT, Ye. Ye.

Granat, Ye. Ye. "Tissue therapy in children," Trudy VI Vsesoyuz. s'yezda det. vrachey, posvyashch. pamyati prof. Filatova, Moscow, 1948, p. 90-95

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

GRANAT, YE. YE. (PROF)   PA 13/49T104

USSR/Medicine - Children, Diseases   Mar 48
    Medicine - Organs, Extracts

"Action of Biogenous Stimulants on Children Suf-
fering From Certain Diseases," Prof Ye. Ye. Granat,
Clinic of Children's Diseases, Khabarovsk Med Inst,
5 pp

"Vop Ped i Okhran Mater i Det" Vol XVI, No 3

Describes administration of placenta extracts to
hypotrephic children.

                                        13/49T104

GRANAT YE. YE.

USSR/Medicine - Immunity   Mar/Apr 49
      Medicine - Influenza

"Medical News" 1 p

"Pediatriya" No 2

Fifth Session of Acad Med Sci convened
23 - 27 Dec 48 in Moscow. Two problems were
considered: immunity and influenza. Prof Ye.
Ye. Granat, Children's Clinic, Khabarovsk Med
Inst, has completed 25 years of medical,
pedagogical, and scientific work. First and
Second Moscow Med Institutes have set up Corre-
spondence Bureaus to render assistance to their
graduate doctors.   41/49T82
LC

GRANAT, Ye.Ye.

GRANAT, Ye.Ye.; PROKINA, N.M.

Lambliasis in Children. Fel'dsher & akush., Moskva No.2:38-41 Feb 52.
(CLML 21:4)

1. Professor for Granat.

KAPCHITS-GUREVICH, R.R.; GRANAT, Ye.Ye., professor, direktor.

Treatment with allilsate of lambliasis in children. Sov.med. 17 no.7:34-
35 Jl '53.
(MLRA 6:8)

1. Klinika detskikh bolezney Stalinskogo instituta usovershenstvovaniya
vrachey. (Garlic--Therapeutic use) (Intestines--Diseases)

GRANAT, Ye.Ye., professor (Stalinsk)

Effect of hetero- and homopreparations, processed by V.P.Filatov's method, on the titer of heterophil antibodies. Vrach.delo no.8:881
                                                    (MIRA 10:8)
Ag '57.

1. Klinika detskikh bolezney (zav. - professor Ye.Ye.Granat) Institut
usovershenstvovaniya vrachey
        (ANTIGENS AND ANTIBODIES)

GRANAT, Ye, Ye

GRANAT. Ye.Ye.

Intestinal and hepatic forms of lamliasis in children. Vop.okh.nat.
i det. 2 no.4:85-86 Jl-Ag '57.   (MLRA 10:9)

1. Iz Stalinskogo gosudarstvennogo instituta usovershenstvovaniya
vrachey.
        (LAMBLIASIS)

USSR / General Problems of Pathology. Transplantation   U-2
           of Tissues and Tissue Therapy.

Abs Jour: Ref Zhur-Biol., No 15, 1958, 70731.

Author : Granata Ye. Ye.
Inst   : Not given.
Title   : The Effect of Heterogenic and Homogenic Tissue
          Extracts Processed According to the Filatov Method,
          on the Titer of Heterophilic Antibodies.

Orig Pub: Vrachebn. Delo, 1957, No 8, 881-882.

Abstract: The titer of rabbit heterophilic antibodies in
          agglutination of ram's erythrocytes increases with
          age. Injections of distilled water retarded the
          increase of titer with age in most rabbits. The
          injection of an extract of human placenta produced
          a decrease of titer [titer of heterophilic anti-
          bodies]. A decrease of titer was noted in six

Card 1/2

USSR / General Problems of Pathology. Transplantation   U-2
           of Tissues and Tissue Therapy.

Abs Jour: Ref Zhur-Biol., No 15, 1958, 70731.

Abstract: rabbits out of the 11 who had been injected with
          pulverized placenta. Sixteen of the twenty rabbits
          who had been injected with an extract of rabbit
          placenta or had received muscle graft of rabbit
          of rabbit tissue showed an increase in titer of
          heterophilic antibodies. -- Ts. S. Lemberg

Card 2/2

GRANAT, Ye.Ye. prof.

Clinical aspects and etiology of the Schonlein-Henoch disease
in children. Vop. okh. mat. i det. 3 no.5:32-35 S-O '58
(MIRA 11:11)

1. Iz kliniki detskikh bolezney (zav. prof. Ye.Ye. Granat)
Stalinskogo instituta dlya usovershenstvovaniya vrachey.
(CHILDREN--DISEASES)
(PURPURA (PATHOLOGY)

GRANAT, Ye.Ye.

Titer of hetrophil antibodies in healthy and sick children.
Vop.okh.mat. i det. 3 no.6:81-82 N-D '58   (MIRA 11:12)

1. Iz Chelyabinskogo meditsinskogo instituta.
   (ANTIGENS AND ANTIBODIES)

GRANAT, Ye.Ye. ; TYURINA, N.S.

Cancer in children. Vop. onk. 5 no.1:94-98 '59.   (MIRA 12:3)

1. Iz kliniki detskikh bolezney (zav. - prof. Ye.Ye. Granat)
Chelyabinskogo meditsinskogo instituta (dir. - prof. G.D. Obraztsov)
Adres avtorov: g. Chelyabinsk, Meditsinskiy institut.
          (NEOPLASMS, in inf. & child,
               (Rus))

GRANAT, Ye.Ye.; TYURINA, N.S.

Influenza in Chelyabinsk children in 1957. Pediatriia 37
no.6:87 Je '59.   (MIRA 12:9)

1. Iz kafedry detskikh bolezney Chelyabinskogo meditsinskogo
instituta.
                 (CHELYABINSK--INFLUENZA)

32000
S/089/62/012/001/003/019
B102/B138

26.2243

AUTHORS: Antonov, A. V., Granatkin, B. V., Merkul'yev, Yu. A.,
             Smolik, Ch. K.

TITLE: Pulse method study of neutron diffusion and thermalization
             in water and ice in a wide temperature range

PERIODICAL: Atomnaya energiya, v. 12, no. 1, 1962, 22 - 29

TEXT: The method, apparatus and results are described, of the investiga-
tion of non-steady neutron diffusion in water and ice at 0.5 - 286°C and
down to -196°C. The pulse method used has been described by Dardel
(Phys. Rev, $\underline{96}$, 1245, 1954) and I. M. Frank. The neutrons, from $T(d,n)He^4$
reactions, were modulated with a repetition frequency of 250 cps at a
pulse duration of 15 μsec. The neutrons were recorded with a $B^{10}F_3$
counter, the counter pulses were fed to a 20-channel time analyzer (dead
time 10 μsec), designed by I. V. Shtranikh, A. Ye. Voronkov, A. M. Volkov
and K. P. Dudareva. An apparatus was designed for studying neutron
diffusion in water at 0.5, 3, 7, 20, 71, 98, 136, 138, 159, 200, 250 and

Card 1/4

Pulse method study of...

32000
S/089/62/012/001/003/019
B102/B138

286°C. The following parameters were measured: neutron life (T) and diffusion coefficient (D), coefficient of diffusion cooling (C) non-diffusion correction (d) (N. Sjöstrand. Arkiv fys. 15, 147 (1959)) transport free path (λ_{tr}), transport cross section (σ_{tr}), diffusion length (L) and mean cosine of neutron scattering angle ($\overline{\cos \theta}$). For water at 21°C the following diffusion parameters were measured: T = 207 ± 7 μsec, D = (0.35 ± 0.01)·10^5 cm^2/sec, C-d = (0.04 - 0.01)·10^5 cm^4/sec. The diffusion parameters for ice at -196°C are given in the table. The experimental values were approximated by means of the following formulas: ✗

$$\frac{D(t^\circ C)}{D(21^\circ C)} = (0,934 \pm 0,028) +$$
$$+ (0,289 \pm 0,009) \, 10^{-2}t +$$
$$+ (0,106 \pm 0,03) \, 10^{-4}t^2. \qquad (5),$$

$\overline{\cos \theta} = 1 - \lambda_s/\lambda_{tr}$ (λ_s - scattering mean free path),

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$$\frac{L(t)}{L(22^\circ C)} = \frac{1}{\varrho} \left[\frac{t+273,1}{204,1} \right]^{1/2} \times$$

$$\times \left[\frac{1,0614}{1+0,0614 \left[\frac{t+273,1}{204,1} \right]^{1/2}} \right]^{1/2}, \quad (9)$$

$$\frac{(C-d)(t)}{(C-d)(21^\circ C)} = (0,987 \pm 0,098) +$$

$$+ (0,619 \pm 0,031) 10^{-3} t +$$

$$+ (0,348 \pm 0,104) 10^{-4} t^2. \quad (10)$$

$$\varepsilon = \frac{1}{6} \frac{D^2}{C} \frac{\overline{\lambda}_s}{\overline{v}} \left(1 + \overline{v} \frac{d \ln \overline{\lambda}_{tr}}{d\overline{v}} \right) \times$$

$$\times \left(2 \frac{E_B}{kT} - 3 \right). \quad (11)$$

(ε - energy transferred by one neutron per collision). The heat-exchange
constant $\gamma = D^2/C$ was $(3.10 \pm 0.35) \cdot 10^5$ sec^{-1}, $\varepsilon = 0.23 \pm 0.07$. Conclu-
sions: Anisotropy in the angular distribution of scattered neutrons in-
creases with temperature. In water at room temperature neutron thermali-
zation satisfies Dardel's theory (Trans. Roy. Inst. Technol. No. 75, 1954)
when the deviation of the neutron temperature from equilibrium is only
small. In ice at -196°C the neutron gas is in equilibrium with the ice.
Equilibrium is established 45 - 75 μsec after slowing down begins. This

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slowing-down time is much greater than in water. The authors thank
I. M. Frank for interest, B. V. Makarov, V. M. Gulikov, V. V. Talakvadze,
and Ye. A. Velichenkova for assistance. There are 7 figures, 1 table, and
17 references: 3 Soviet and 14 non-Soviet. The four most recent refer-
ences to English-language publications read as follows: K. Beckurts.
Symposium on "In Pile Neutron Spectra and Pulsed Neutrons Methods". Den-
mark, 1960; D. Hughes et al. Phys. Rev., 119, 872 (1960); D. Hughes,
R. Schwards. Neutron Cross Sections. New York, 1958; K. Rockey, S. Skolnik.
Nucl. Sci. Engng, 8, 62 (1960).

SUBMITTED: July 1, 1961

Table

t, °C	ϱ, c/cм³	T, мксек	$10^5 \frac{D}{см²/сек}$	$\frac{(C-d)}{10^6 см⁴/сек}$	L, см	σ_{tr}, барн	λ_{tr}, см	$\overline{\cos\theta}$
−196	0,917±0,010	215±10	0,095±0,004	0,02±0,01	1,43±0,07	146±6	0,224±0,009	—
—	—	222	0,105±0,004	0,025±0,10	1,53±0,08	132±6	0,248±0,010	0,10±0,05

Card 4/4

ANTONOV, A.V.; GRANATKIN, B.V.; MERKUL'YEV, Yu.A.; PUZANOV, V.V.; SMOLIK, Ch.K.

Neutron diffusion for water and ice at temperatures near 0°C and -80°C. Atom. energ. 13 no.4:373-374 0 '62.   (MIRA 15:9)
(Neutrons—Scattering)

MEL'NIKOVA, O., arkhitektor; GRANATKIN, G., arkhitektor

Universal four-story industrial building. Prom.stroi.i inzh.soor.
4 no.1:10-14 Ja-F '62.   (MIRA 15:8)
    (Industrial buildings)   (Precast concrete construction)

L 22738-66   EPF(n)-2/EWA(h)/EWT(1)/EWT(m)

ACC NR: AP6007959   SOURCE CODE: UR/0089/66/020/002/0164/0165

AUTHORS: Antonov, A. V.; Merkul'yev, Yu. A.; Granatkin, B. V.

ORG: none

TITLE: Temperature dependence of the diffusion parameters of neutrons in water and in ice

SOURCE: Atomnaya energiya, v. 20, no. 2, 1966, 164-165

TOPIC TAGS: neutron diffusion, temperature dependence, water, ice, neutron cross section, transport property

ABSTRACT: This is a continuation of earlier work by the authors (Atomnaya energiya v. 12, 22, 1962 and 13, 373, 1962), where they determined the temperature dependence of the diffusion coefficient D(t) and of the diffusion-cooling coefficient C(t) of thermal neutrons for water and ice. To reconcile the earlier results with those of W. W. Glendenin (Nucl. Sci. and Engng. v. 18, 351, 1964), the authors used the experimental values of D in water to calculate, by means of elementary formulas, the values of the transport cross

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L 22738-66

ACC NR: AP6007959   2

section of thermal neutrons and their temperature dependence. They
also calculated the temperature dependence of the mean square of the
exchange energy for water and for ice, with allowance for the non-
diffusion correction of the diffusion coefficient. The calculations
show that when water is heated the mean square exchange energy per
hydrogen atom increases, thereby increasing the diffusion motion of
the molecules in the water and weakening the interaction between the
liquid molecules. The reasons for this increase are the weakening
of the molecular forces that prevent the exchange of energy between
neutrons with increasing temperature, and the fact that the rotational
motion of the water molecules approaches the motion of the free
rotator. The earlier investigation was based on the assumption that
the transport cross section is proportional to the reciprocal square
root of the energy, and the present results confirm this assumption.
The authors thank I. M. Frank and M. V. Kazarnovskiy for reviewing
the article and remarks. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 20/   SUBM DATE: 25Aug 65/ ORIG REF: 004/ OTH REF: 004

Card 2/2

GRANATMAN, Vsevolod Vladimirovich; KHUTORENKO, I.A., red.

    [Logic elements using cold-cathode tubes] Logicheskie ele-
    menty na lampakh s kholodnym katodom. Leningrad, 1964.
   23 p.   (MIRA 17:9)

AM4017341   BOOK EXPLOITATION   S

Granatman, Vsevolod Vladimirovich; Danilov, Vladimir Ivanovich, Kiryachek,
Andrey Yakovlevich

Industrial contactless apparatus with discrete action; a survey (Promy*shlennaya
    beskontaktnaya apparature diskretnogo deystviya; obzor), Leningrad, LDNTP,
    1963, 102 p. illus., biblio. 4,500 copies printed. (At head of title:
    Leningradskoye otdeleniye Obshchestva po rasprostraneniyu politicheskikh i
    nauchny*kh znaniy RSFSR)

Series Note: Leningradskiy Dom nauchno-tekhnicheskoy propagandy*. Seriya:
    Pribory* i elementy* avtomatiki

TOPIC TAGS: contactless apparatus, automation, magnetic core, automation, magnetic
logic element, ferrite transistor logic element, square hysteresis loop

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LADYZHENSKIY, M.M.; LYUBOMIRSKAYA, S.I.; TANKHILEVICH, V.A.;
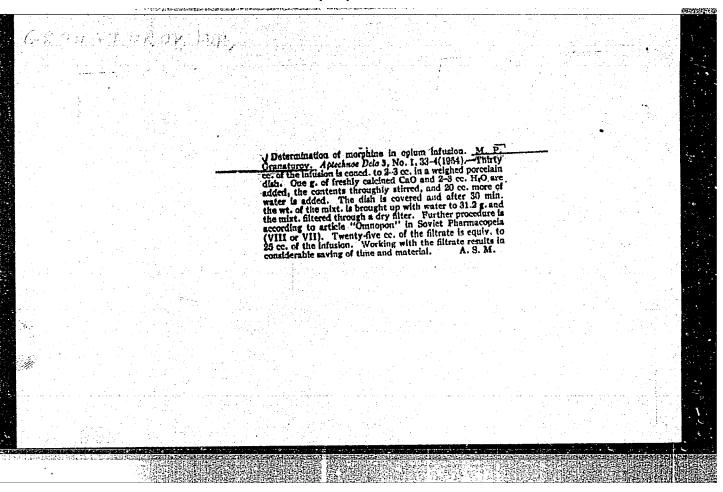   TOMASHEVSKAYA, I.A.; TSIRKEL', M.L.; GRANATMAN, V.V.,
        red.

[Use of TK-3B,TKh-4B, and TKh-5B cold-cathode thyratrons
in pulse circuits] Opyt primeneniia tiratronov s kholod-
nym katodom tipov TK-3B, TKh-4B, TKh-5B v impul'snykh
skhemakh. Leningrad, 1964.   22 p.   (MIRA 17:11)

GRANATUROV, G., mayor, master sporta SSSR

Mikhail Osintsev plays in the first line. Starsh.-serzh. no.11:39
O[i.e. N] '61.   (MIRA 15:2)

1. Predsedatel' komiteta po khokkeyu s myachom Federatsii khokkeya
SSSR.
                                    (Hockey)

Determination of morphine in opium infusion. M. P. Granaturoy. *Aptechnoe Delo* 3, No. 1, 33-4(1954).—Thirty cc. of the infusion is concd. to 2-3 cc. in a weighed porcelain dish. One g. of freshly calcined CaO and 2-3 cc. H_2O are added, the contents throughly stirred, and 20 cc. more of water is added. The dish is covered and after 30 min. the wt. of the mixt. is brought up with water to 31.2 g. and the mixt. filtered through a dry filter. Further procedure is according to article "Omnopon" in Soviet Pharmacopeia (VIII or VII). Twenty-five cc. of the filtrate is equiv. to 25 cc. of the infusion. Working with the filtrate results in considerable saving of time and material.   A. S. M.

GRANATUROV, M.P.; DMITRENKO, M.A.

Quantitative determination of the alkaloids in the Thermopsis
herb. Apt.delo 9 no.2:48-49 Mr-Ap '60.   (MIRA 13:6)
                       (ALKALOIDS)

GRANATYUK, P.N.; RADZIVONCHIK, Ye.A.

The medical center in the control of trauma and suppurative diseases.
Zdrav.Turk. 3 no.6:37-38 N-D '59.   !   (MIRA 13:5)

1. Iz zheleznodoroshnoy bol'nitsy stantsii Mary, Turkmenistav.
          (RAILROADS--REPAIR SHOPS--HYGIENIC ASPECTS)

GREBTSOV, G.I., kand. ekon. nauk, dots.; SMEKHOV, B.M., kand. ekon. nauk, dots.; SMOLYAR, L.I., starshiy prepodavatel'; GRANBERG, A.G.; AGANBEGYAN, A., kand. ekon. nauk, red.; KONIKOV, L.A., red.; GERASIMOVA, Ye.S., tekhn. red.

[Principles of working out an interbranch balance]Osnovy razrabotki mezhotraslevogo balansa; uchebnoe posobie. [By]G.I.Grebtsov i dr. Moskva, Ekonomizdat, 1962. 278 p.   (MIRA 16:3)

1. Vychislitel'nyy tsentr Gosudarstvennogo nauchno-ekonomicheskogo soveta Soveta Ministrov SSSR (for Granberg).
        (Russia—Economic policy)
      (Programming (Electronic computers))

BURSHTEYN, Feliks Isayevich; GUSEV, Vladimir Timofeyevich;
    GRANBERG, A.G., nauchn. red.; KONIKOV, L.A., red.izd-va;
    PONOMAREVA, A.A., tekhn. red.

[What an interbranch balance is] Chto takoe mezhotraslevoi
balans. Moskva, Ekonomizdat, 1963. 85 p.   (MIRA 16:10)
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            (Industrial statistics)